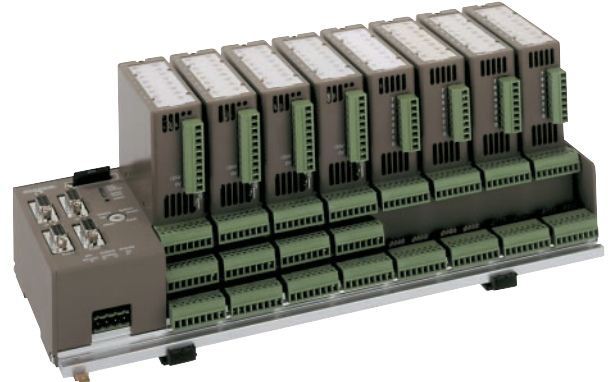


Technical
Information



IMPULSES FOR AUTOMATION

High-performance universal control systems

Control system ProfiControl 680V

- Short cycle times due to high-speed processing
- Interrupt support for very fast, non-cyclic event handling
- Real-time operating system provides multitasking
- Switch selection of functions and convenient diagnostic features for ease of operation
- PROFIBUS and CANopen networking for easy control of decentralised systems
- Enhanced modular design for high adaptability to a multitude of applications
- No maintenance due to NV-RAM and internal flash memory for program and data
- MMC data memory extension to up to 8 MB
- Compact design for reduced installation space
- DIN top hat rail bracket for easy installation



System description

ProfiControl 680V: the control system ideal for automation technology

ProfiControl 680V is a universally applicable PLC for a multitude of applications and fit for medium and high levels of automation technology focussing on production engineering. Its modular design without a fan adapts to various modules of the 680 system. Versions with 4 or 8 module slots are available. The large unit features 32 integrated inputs and outputs some of which can be used as interrupt inputs or fast counter inputs or PWM outputs etc.

PROFIBUS DP topologies are implemented as quickly as and in parallel with **CANopen** architectures (NMT master) turning **ProfiControl 680V** into a real communication genius along decentralised structures. A minimum of switching cabinet demands is the result of these advantages.

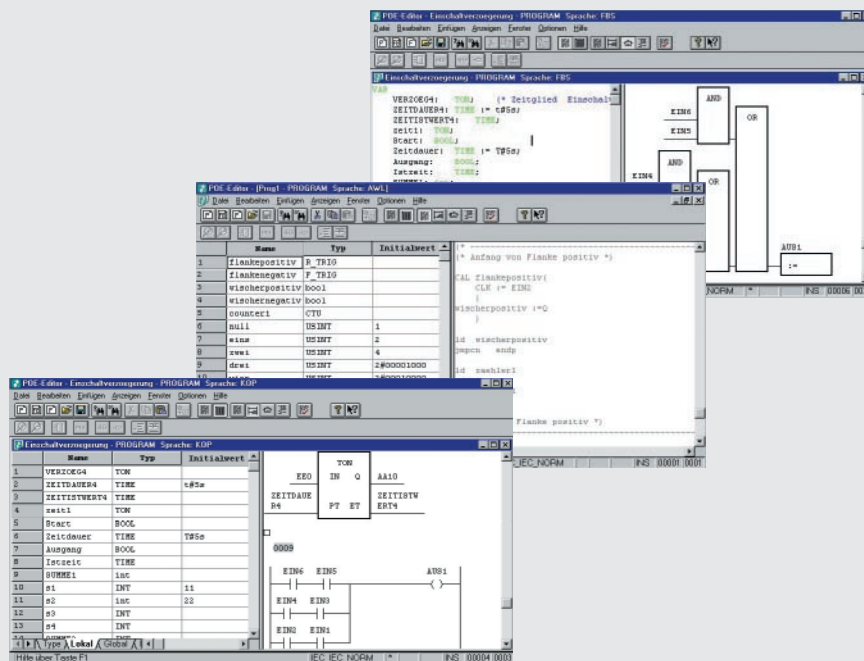
Easy and user-friendly handling make **ProfiControl 680V** the economic and convenient solution to any automation problem posed by the following industries:

- Production engineering
- Series and special machinery (all types of production machines), OEM
- General machine building
- Textile industry
- Paper industry and the press
- Wood processing
- Automotive
- Plastics processing
- Packaging industry
- Foodstuff and luxury foods industry
- Process engineering (e.g. water supply/ disposal, mechanical services ...)

ProfiControl 680V has the following key benefits:

- Short cycle times due to high-speed processing
- Interrupt support for very fast, non-cyclic event handling
- Real-time operating system provides multitasking
- Switch selection of functions and convenient diagnostic features for ease of operation
- **PROFIBUS** and **CANopen** networking for easy control of decentralised systems
- Enhanced modular design for high adaptability to a multitude of applications
- No maintenance due to NV-RAM and internal flash memory for program and data
- MMC data memory extension to up to 8 MB
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Programming and diagnosis



Programming

Programming tools are either KUBES, Kuhnke's proven IL programming language, or IEC 61131-3 both providing the LD, FD, ST or IL programming modes. The PLC's multitasking system allows high-level language programs or parts of them to be embedded with timer or event control. The powerful processor makes program execution very fast (1k of logical instructions in less than 0.4 ms).

Diagnosis

Operability of the system and the application is permanently monitored by the PLC's intelligent diagnostic system. Device operation and diagnosis at the place of installation are facilitated by operating elements. Even without a PC at hand, users quickly know the status of the unit and can act accordingly. The program is backed up by a separate diagnostic memory which lets it quickly retrieve the data it needs and promptly react to the information.

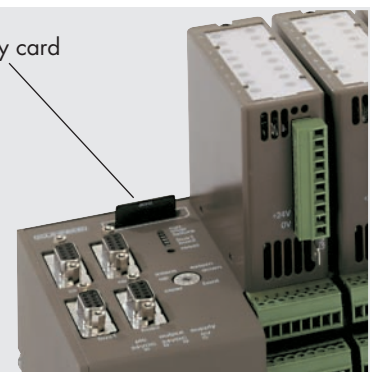
Memory concept

Memory

Once in the PLC, the program can be analysed and debugged even during operation. The unit is equipped with up to 2 MB of internal flash memory or RAM, depending on the configuration. An internal flash memory or an external MultiMediaCard™ are available for storing the user program. If you let it reside on the external medium you can download it into the unit to run the program.

The slot card serves as a memory module not only for the program but also for data. Its memory range can thus be extended to more than 8 MB. Its file system allows you to store XML or HTML pages in it to feed the integrated web server. Remanent data goes into the internal non-volatile NV-RAM which rules out battery or accumulator maintenance, thus extending long-term use.

Memory card



Interfaces

There are two **RS232** interfaces, e.g. for programming, visualisation or modem communication. Standard protocols are just as supported as software-tailored protocols which meet special customer requirements. Connect **EtherGate 692Com** to access the integrated web server.

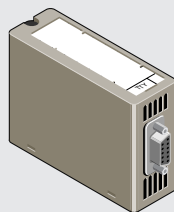
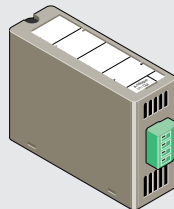
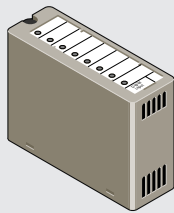
The unit features ports to the **PROFIBUS DP** 12 MBit/s and **CANopen** field busses. PROFIBUS is the vendor-independent platform which has become as firmly established a site on the automation marketplace as have other field bus systems. It fully covers all of the control and field device levels.

Use the CAN interface as an open **CANopen** port or a proprietary Layer 2 CAN port. The interface hardware is designed as 9-pin D-Sub sockets. Interface modules allow you to further extend the number of ports.

Technical field bus data

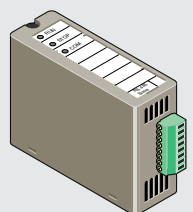
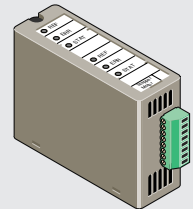
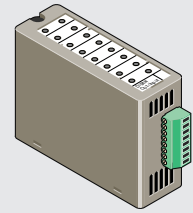
	PROFIBUS	CANopen
Baud rates	9.6 KBit/s to 12 MBit/s	up to 1 MBit/s
Addressing	by software	by software
Type	Class 1 PROFIBUS DP master	CANopen NMT master
Number of slaves (w/o repeater)	31	31
Number of slaves	124	

Modularity



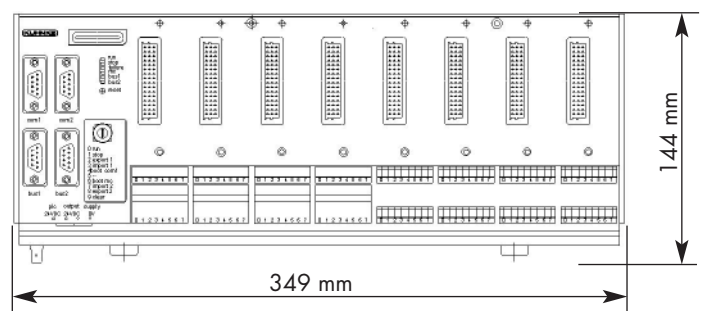
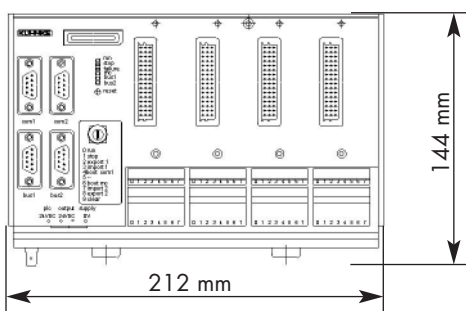
ProfiControl 680V variants have 4 or 8 module slots. The following modules are available:

- Digital modules
 - Dig. input modules
 - Dig. output modules
 - Dig. I/O modules
 - Interrupt input modules
- Analogue input modules
 - 0...10 V, 0 (4)...20 mA, PT100, potentiometer
 - NiCrNi
 - 10 - 16 bit
- Analogue I/O modules
 - 0...10 V, 0 (4)...20 mA, ± 10 V
 - 10 - 16 bit
 - Analogue output modules
 - 0...10 V, 0 (4)...20 mA
 - 8 bit
- Interface modules
 - V.24 (RS232)
 - TTY (20 mA)
 - RS485
 - PROFIBUS DP slave



ProfiControl 680V, top view

Height without modules = 127 mm



Technical data

	ProfiControl 680V, 4 slots	ProfiControl 680V, 8 slots
Type		Modular design
Program memory		256 KByte flash
Data memory, internal		240 KByte RAM, 32 KByte NV-RAM
Data memory, module		8 MB memory card (flash RAM)
Interfaces		2 x RS232, 9-pin Sub-D 1 x CANopen, 9-pin Sub-D 1 x PROFIBUS DP, 9-pin Sub-D
Potential separation		Yes (CAN and PROFIBUS)
Max. number of digital inputs	64	144
Including internal inputs	-	16
Internal digital inputs	-	8 x 24 V DC, 0.5 ms delay
Internal interrupt inputs	-	8 interrupt support, 0.3 ms delay
Internal counter inputs	-	2 fast counters (25 kHz) or 1 A, B, Ref counter
Connectors		Screw-type locking blocks of 8 (3.41)
Potential separation		No
Max. number of digital outputs	64	144
Including internal outputs	-	16
Internal digital outputs, fast	-	8 x 24 V DC, short circuit-proof
Output current	-	0.5 A
Digital outputs, fast	-	8 x 24 V DC, short circuit-proof, PWM
Output current	-	0.1 A
Connectors		Screw-type locking blocks of 8 (3.41)
Potential separation		No
Power supply		24 V DC \pm 20 %
Connectors		Screw-type locking blocks of 4 (5.08)
Separate supply		Yes
Protection		IP 20
Status indication		5 LEDs, 1 rotary selector switch
I/O status indication		LEDs
Temperature range, operation		0 - 50° C
Temperature range, storage		-20 - 70° C
Dimensions	212 x 144 x 127 mm	349 x 144 x 127 mm

Order data

Part numbers	Description
680.700.04	ProfiControl 680VM, 4 slots, PROFIBUS master
680.700.08	ProfiControl 680VM, 8 slots, PROFIBUS master
680.702.04	ProfiControl 680VC, 4 slots, CANopen
680.702.08	ProfiControl 680VC, 8 slots, CANopen
680.704.04	ProfiControl 680VMC, 4 slots, PROFIBUS master + CANopen
680.704.08	ProfiControl 680VMC, 8 slots, PROFIBUS master + CANopen
680.180.18	Memory card MMC 8 MB flash
680.180.02	Screw-type locking terminals (12 pcs) blocks of 8 for ProfiControl 680
657.151.03	Programming cable PC <-> PLC
E 598 GB	Instruction manual ProfiControl 680V
E 611 GB	Instruction manual PROFIBUS DP
E 615 GB	Instruction manual CANopen

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